

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
GALVESTON DIVISION

ASHLEY ADAMS, individually and as the
representative of the Estate of RODNEY
GERALD ADAMS; and WANDA ADAMS,
individually;

CARLETTE HUNTER JAMES, individually and
as the representative of the Estate of KENNETH
WAYNE JAMES; KRISTY JAMES, KRYSTAL
JAMES, KENDRICK JAMES, ARLETT
JAMES, JONATHAN JAMES and KENNETH
EVANS, individually and as heirs-at-law to the
Estate of Kenneth Wayne James, and MARY
LOU JAMES, individually,

CADE HUDSON, individually and as the
representative of the Estate of DOUGLAS
HUDSON,

PLAINTIFFS

v.

BRAD LIVINGSTON, individually and in his
official capacity, JOE OLIVER, NANCY
BETTS, L. FIELDS, JOHN DOE, ROBERT
LEONARD, BRANDON MATTHEWS,
DEBRA GILMORE, SARAH RAINES,
DANNY WASHINGTON, MATTHEW SEDA,
TULLY FLOWERS, DORIS EDWARDS,
LINDA McKNIGHT, REVOYDA DODD,
RICK THALER, WILLIAM STEPHENS,
ROBERT EASON, DENNIS MILLER,
REGINALD GOINGS, and OWEN MURRAY
in their individual capacities, TEXAS
DEPARTMENT OF CRIMINAL JUSTICE, and
UNIVERSITY OF TEXAS MEDICAL
BRANCH

DEFENDANTS

CIVIL ACTION NO.
3:13-cv-217
JURY DEMANDED

Exhibit B

Patient Account: 20005972-517
 Med. Rec. No.: (0150)1797921
 Patient Name: **ADAMS, RODNEY GERALD**
 Age: 45 YRS DOB: 10/02/66 Sex: M Race: C
 Admitting Dr.: OUTSIDE TDCJ
 Attending Dr.: OUTSIDE TDCJ
 Date / Time Admitted: 08/06/12 1413
 Copies to:

UTMB
 University of Texas Medical Branch
 Galveston, Texas 77555-0543
 (409) 772-1238
 Fax (409) 772-5683
Pathology Report

1797921
FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-12-00167

AUTOPSY INFORMATION:

Occupation: INMATE Birthplace: UNK Residence: TEXAS
 Date/Time of Death: 8/4/12 17:50 Date/Time of Autopsy: 8/8/12
 Pathologist/Resident: WALKER/VAN DELLEN Service: TDC CONTRACT
 Restriction: NONE

The on-line version of the final autopsy report is abbreviated. If you would like a copy of the complete final report, or if you have any questions regarding this report, please contact the Autopsy Division Office, (409)772-2858.

FINAL AUTOPSY DIAGNOSIS

- | | |
|--|----|
| I. Body As a Whole: Clinical history of hyperthermia (107 degrees Fahrenheit), hypotension, and coagulopathy consistent with DIC | C2 |
| A. Brain: Diffuse cerebral edema with mild tonsillar herniation | A4 |
| B. Lungs, bilateral: Edema and congestion (left lung = 940g, right lung = 840 g) | A4 |
| 1. Diffuse petechiae of the visceral pleura | A4 |
| C. Lung, left: Early bronchopneumonia; focal chronic interstitial pneumonia | A3 |
| D. Spleen: Geographic necrosis | A4 |
| E. Kidneys, bilateral: Scattered cortical petechiae; no thrombi detected | A4 |
| F. Mediastinum: Soft tissue hemorrhage | A4 |
| G. Aorta, suprarenal: Patchy areas of adventitial hemorrhage | A4 |
| H. Colon: 1L dark, red stool | A4 |
| 1. Patchy areas of mucosal petechiae and congestion | A4 |
| II. Other Findings: | |
| A. Kidney, left: Simple cyst in the upper pole, 1.5 x 1.5 cm, with clear, yellow fluid | A5 |
| B. Bladder: Muscular hypertrophy; patchy areas of mucosal congestion | A3 |
| E. Liver: Mild steatosis | A5 |

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***TYPE: Anatomic(A) or Clinical(C) Diagnosis.
 IMPORTANCE: 1-immediate cause of death (COD); 2-underlying COD;
 3-contributory COD; 4-concomitant, significant; 5-incidental ***

Patient Name: ADAMS, RODNEY GERALD
 Patient Location: AUTOPSY
 Room/Bed: -
 Printed Date / Time: 09/14/12 - 1007

Continued....

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CLINICAL SUMMARY:

The decedent was a 46 year old white male, incarcerated at TDCJ, and in a holding barracks with 54 other inmates, awaiting transfer to the state penitentiary. On August 3rd, 2012, he was found by a security guard to be having a seizure, and was transported to Palestine Regional Medical Center. He presented to the emergency department unresponsive with a temperature of 107 degrees Fahrenheit, severe hypotension, and coagulopathy consistent with disseminated intravascular coagulation (DIC). He was transferred to East Texas Medical Center the same day, at 2352 hours, and in addition to the findings above, was noted to have metabolic acidosis and creatine kinase level of 1320 IU/L (normal 60 and 400 IU/L). As he remained unresponsive and in refractory shock, it was determined that further resuscitative efforts were futile. Given his poor prognosis, and with the consent of his mother, mechanical ventilation and pressor therapy were withheld. He was pronounced dead on August 4th, 2012 at 1750 hours, and a complete autopsy was performed on August 8th, 2012. The outside temperature of the holding cell taken at the time of the inciting event on August 3rd, 2012 was recorded to be 102 degrees Fahrenheit, with a humidity of 38%, and the ambient temperature was 91.6 degrees Fahrenheit. Based on the autopsy findings, it is our opinion that the cause of death was hyperthermia resulting in fulminant DIC and hypotensive shock. The manner of death is natural.

MVD/TW
09/06/12

Patient Name: **ADAMS, RODNEY GERALD**
Patient Location: **AUTOPSY**
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Continued....

Patient Account: 20005972-517

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Pathology Report**FINAL AUTOPSY REPORT**

Autopsy Office (409)772-2858

Autopsy No.: AU-12-00167

GROSS DESCRIPTION:

I. CLOTHING AND PERSONAL EFFECTS: None

II. THERAPEUTIC INTERVENTION:

- Endotracheal tube
- Nasogastric tube
- Left antecubital fossa area: catheter
- Dorsum of right hand: intravenous catheter
- Left 2nd digit: pulse oximeter
- Right femoral area: triple lumen catheter
- Rectum: Flexi-Seal catheter

III. EXTERNAL EXAMINATION

The body, identified by name on the right wrist band, right ankle band, and right toe tag, is that of a well-nourished adult 46 year-old Caucasian male, with a body length of 167 cm. Rigor mortis is present in all four extremities. The skin is white and intact, with red/pink and slightly blanchable lividity present in the forehead, anterior and posterior neck, and posterior thorax. Short, reddish/brown hair is present on the supraorbital ridge, anterior thorax, abdomen, and pubic area, and similarly-colored hair stubble on the scalp and chin. The sternal area is shaven, with four surrounding electrocardiogram pads. The calvarium is symmetric and intact to palpation, and the scalp is intact. The corneae are clear, the sclerae are white, and the conjunctivae are injected. There is hemorrhage of the sclera in the lateral corner of the right eye. The irides are blue, and the pupils are 0.4 cm bilaterally. Dentition is fair. The penis is circumcised, and the testicles are descended.

The following marks and scars are present:

- Left periorbital ecchymosis, spanning 2.5 cm inferiorly and 1.5 cm superiorly, measured from the lateral canthus
- Right anterior neck: 10.5 cm linear scar
- Right deltoid: tattoo of skull with the name "Harley Davidson"
- Right deltoid: puncture wound with surrounding ecchymosis
- Left anterior upper extremity: 5 cm area of scattered petechiae and ecchymosis
- Right posterior forearm: puncture wound
- Left posterior forearm: puncture wound with surrounding ecchymosis
- Right antecubital fossa: puncture wound with surrounding ecchymosis
- Left antecubital fossa: puncture wound with surrounding ecchymosis
- Sternal area: 8 cm x 5 cm area of patchy ecchymosis
- Right inguinal area: 4 cm x 3.2 cm and 1 cm x 1 cm dry, yellow scabs
- Right anteromedial thigh: 2 cm x 2 cm dry, yellow, scab
- Left inguinal area: 3 puncture wounds with surrounding dried blood and ecchymosis
- Left anteromedial thigh: 4 cm x 5 cm dry, yellow scab

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Continued....

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GROSS DESCRIPTION:

- Left anterior leg: 2 blue punctate scars, 1 punctate scab, 1 scab measuring 1 cm x 0.5 cm
- Right anteromedial leg: 2 linear scabs measuring 0.5 cm each

IV. INTERNAL EXAMINATION

The body is opened using a Y-shaped incision to reveal a 5.0 cm panniculus and the thoracic organs in the correct anatomic positions. There is mediastinal soft tissue hemorrhage.

SEROUS CAVITIES: The pericardial space contains 48 mL of clear, red fluid. The right and left pleural spaces contain 100 mL and 150 mL clear, red fluid, respectively. The peritoneal space contains 50 mL clear, red fluid.

CARDIOVASCULAR SYSTEM: The heart weighs 352 g (normal 270-360 g). The left ventricular wall is 1.5 cm (normal 1.0-1.8 cm) in thickness at the junction of the posterior papillary muscle and free wall, with concentric hypertrophy. The right ventricle is 0.2 cm (normal 0.25-0.3 cm) thick, measured 2 cm below the pulmonic valve annulus, anteriorly. The cardiac valves are unremarkable. Valve circumferences measured on the fresh heart are: tricuspid valve 10.4 cm (normal 12-13 cm), mitral valve 10.2 cm (normal 10.5-11.5 cm), aortic valve 7.4 cm (normal 7.7 cm-8 cm), pulmonic valve 8.0 cm (normal 8.5-9 cm). There are no acute ischemic cardiac lesions identified. The endocardium is smooth, and the majority of the anterior surface of the heart is covered with epicardial fat.

The coronary arteries are dissected longitudinally, and no significant stenosis is observed. The posterior circulation is right dominant. The thoracic and abdominal aorta and major branches are intact. There is no embolus or thrombus observed in the pulmonary artery. There are moderate fatty streaks of the suprarenal aorta as well as patchy areas of adventitial hemorrhage, and moderate atherosclerotic plaques of the infrarenal aorta. The celiac, superior and inferior mesenteric, renal, and iliac arteries are normal. The superior and inferior vena cavae and portal vein are normal.

RESPIRATORY SYSTEM: The neck presents an intact hyoid bone as well as thyroid and cricoid cartilages. The larynx is composed of unremarkable vocal cords and folds, appearing widely patent without foreign material, and is lined by smooth, glistening membrane. The epiglottis is a characteristic plate-like structure, and grossly unremarkable. Both the musculature and the vasculature of the anterior neck are unremarkable. The trachea is in the midline, and its mucosa is mildly congested. The right lung weighs 850 g and the left 940 g. There are diffuse bilateral petechiae in the visceral pleura. Both lungs appear edematous with patchy areas of congestion.

GASTROINTESTINAL SYSTEM: The tongue has a finely granular surface and is

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GROSS DESCRIPTION:

unremarkable. The pharynx and esophagus are intact with diffusely congested mucosa. The stomach is intact and contains approximately 50 mL of dark green fluid, and is grossly unremarkable.

There are patchy areas of mucosal petechiae in the small bowel. The large bowel contains approximately 1 L of dark red stool. There is an area of dark, mottled discoloration in the serosa of the transverse colon. There are patchy areas of mucosal petechiae and congestion in the entire length of large bowel.

The appendix is present and grossly normal.

The surface of the liver is smooth, diffusely tan, and grossly unremarkable. Serial slicing reveals a smooth homogenous parenchyma.

The gallbladder and extrahepatic biliary tree are intact, and the gallbladder contains 35 ml of dark green bile, with an unremarkable mucosa. The cystic and common bile ducts are patent. Cholecystitis or lithiasis are not identified. The structures of the hepatic hilus are intact. The pancreas has a normal conformation. The parenchyma is slightly autolyzed, tan, and there is patchy fatty infiltration. The major ducts are patent.

GENITOURINARY SYSTEM: The renal cortical surfaces have patchy areas of congestion and scattered petechiae. The capsules strip with ease. The right kidney weighs 180 g and the left 200 g. The right cortex and medulla are 0.6 cm and 1.2 cm, respectively, and the left cortex and medulla are 0.8 cm and 1.4 cm, respectively. There is a 1.5 cm x 1.5 cm simple cyst in the upper pole of the left kidney, which contains clear, yellow fluid. The renal columns of Bertin extend between the well demarcated pyramids and appear unremarkable. The medulla presents normal renal pyramids with unremarkable papillae. No calculi are observed. The renal arteries and veins are unremarkable.

The ureters are of normal caliber lying in their course within the retro-peritoneum and are probe-patent into the urinary bladder. There are patchy areas of congestion in the urinary bladder mucosa, and mild hypertrophy of the bladder wall.

Prostate: The prostate is tan in color, and appears normal in size. Serial slicing reveals a uniformly smooth, tan surface.

Testes: The right and left testes weigh 13.9 g and 15.4 g, respectively (normal 20-25 g). The tunica albugineas are tan/white, smooth and glistening. The cut surfaces are tan/yellow, and the tubules string with ease.

HEMATOPOIETIC SYSTEM: The spleen weighs 180 g (normal 125 - 195 g). The cut surface reveals a dark red parenchyma with multiple patchy areas of pale

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GROSS DESCRIPTION:

discoloration consistent with necrosis.

ENDOCRINE SYSTEM: The thyroid gland weighs 15.5 g (normal 10-22 g), presenting two well-defined lobes with connecting isthmus and a beefy brown cut-surface. There is a 0.5 cm x 1.5 cm tan, circumscribed nodule in the parenchyma. The parathyroids are not identified. Adrenal glands are of normal shape. The right and left adrenal glands weigh 6.6 g and 6.5 g, respectively. Serial sectioning presents no gross lesions.

CENTRAL NERVOUS SYSTEM: The scalp is intact without contusions or lacerations. The calvarium is likewise intact without bony abnormalities or fractures. The brain weighs 1,520 g (normal 1200-1400 g). There is diffuse gyral flattening and mild tonsillar herniation. The brain is fixed in formalin for later examination by a neuropathologist.

SPINAL CORD: The spinal cord is fixed and formalin for later examination by a neuropathologist.

MVD/TW
08/14/12

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FINAL AUTOPSY REPORT

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MICROSCOPIC DESCRIPTION:

Note: All slides are stained with H&E unless otherwise specified.
NPC = No Pathologic change (autolysis) after a diagnosis means that post mortem decomposition compromised the assessment

Adrenals, slide 1: NPC

Testes, slide 2: Focal atrophy, otherwise NPC

Thyroid, slide 3: Multinodular, NPC

Lung, left, slide 4: Early bronchopneumonia; focal chronic interstitial pneumonia

Lung, right, slide 5: Congestion; hemosiderin-laden macrophages

Heart, left, slides 6-8: NPC

Heart, right, slide 9: NPC

Kidneys, slide 10: No thrombi detected (autolysis)

Liver, slide 11: Mild steatosis

Spleen, slide 12: Multiple foci of congestion

Duodenum, slide 13: NPC

Colon, slide 14: NPC

Prostate, slide 15: NPC

MVD/TW
09/07/12

Patient Name: **ADAMS, RODNEY GERALD**
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CLINICOPATHOLOGIC CORRELATION:

Hyperthermia with a core temperature of 104 degrees Fahrenheit or greater can be life threatening, and may occur when the body produces an excessive amount of heat, cannot adequately dissipate heat, such as when exposed to extreme environmental temperatures. As the core temperature increases, there is an increase in metabolic rate and oxygen consumption. Enzymes are affected by changes in temperature, as these proteins require a certain temperature and pH range beyond which they begin to denature. Injury to the cell membrane occurs, and tissues begin to leak potassium into the circulatory system. Rhabdomyolysis, or destruction of muscle tissue, can cause dangerous electrolyte imbalance, as well as release of myoglobin, which can have deleterious effects on the kidney. Vascular endothelium is particularly sensitive to hyperthermia, and when damaged, there is system activation of the clotting cascade, causing disseminated intravascular coagulopathy (DIC). When this occurs, there is depletion of platelets and other clotting factors in the formation of systemic microthrombi, which can damage delicate microvasculature, such as in the kidney. Multisystem organ failure ultimately occurs, and the decreased mean arterial blood pressure is inadequate to sustain perfusion to vital organs.

MVD/TW
09/06/12

DAVID H. WALKER, M.D., PATHOLOGIST

(Electronic Signature)

09/10/12

Patient Name: **ADAMS, RODNEY GERALD**
Patient Location: **AUTOPSY**
Room/Bed: -
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Patient Account 20005972-517
 Med. Rec No (0150)1726849
 Patient Name JAMES, KENNETH W
 Age 52 YRS DOB 11/25/58 Sex M Race B
 Admitting Dr OUTSIDE TDCJ
 Attending Dr OUTSIDE TDCJ
 Date / Time Admitted 08/17/11 0811
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172 6849
FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00174

AUTOPSY INFORMATION:

Occupation: INMATE Birthplace: UNKNOWN Residence: TEXAS
 Date/Time of Death: 8/13/2011 4:16 Date/Time of Autopsy: 8/17/2011
 Pathologist/Resident: WALKER/XU Service: TDC CONTRACT
 Restriction: NONE

 The on-line version of the final autopsy report is abbreviated. If you would like a copy of the complete final report, or if you have any questions regarding this report, please contact the Autopsy Division Office, (409)772-2858.

FINAL AUTOPSY DIAGNOSIS

- I. Body as a whole: Clinical history of hyperthermia, hypertension, depression, back injury, and sudden unexpected death, status post unsuccessful cardiopulmonary resuscitation C1,2
- A. Heart: Cardiomegaly (weight 500 g) A3
 - B. Heart, ventricle, left: Hypertrophy A3
 - C. Heart, left ventricle, posterior wall: focal patchy myocardial necrosis A3
 - D. Skeletal muscle: Rhabdomyolysis A3
 - E. Coronary arteries: Moderate atherosclerosis A3
 - F. Aorta, infrarenal segment: Mild atherosclerosis A3
 - 1. Left anterior descending artery: 50% stenosis with atherosclerotic plaque, 2.5 cm from origin A3
 - 2. Left circumflex artery: 50% stenosis with atherosclerotic plaque, 1.8 cm from origin A3
 - 3. Right coronary artery: 30% stenosis with atherosclerotic plaque, 2.0 cm from the origin A3
 - G. Lung, bilateral: Congestion with edema (weight, right 760 g; left 700 g) A3
 - H. Lung, right: Aspiration pneumonia A3
 - I. Ribs: Fracture with hemorrhage, consistent with cardiopulmonary resuscitation
 - 1. Left 6th rib: Fracture A5
- II. Other findings:
- A. Adrenal gland, right: Cortical adenoma A5
 - B. Prostate: Mild nodular benign hyperplasia A5
 - C. Colon, serosa: Fibrotic adhesion A5
 - D. Vertebrae, lumbar: Spurs A5
 - E. Ileum: Meckel's diverticulum A5

***TYPE: Anatomic(A) or Clinical(C) Diagnosis.
 IMPORTANCE: 1-immediate cause of death (COD); 2-underlying COD;
 3-contributory COD; 4-concomitant, significant; 5-incidental ***

Patient Name JAMES, KENNETH W
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Pathology Report

FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00174

CLINICAL SUMMARY:

The decedent was a 52-year-old black male TDCJ inmate with a past medical history of hypertension (BP, 170/107 mmHg), depression, back injury (2002, 2004), and drug abuse (marijuana, cocaine). The list of his medications was: Hydrochlorothiazide, Propranolol, Enalapril, Lisinopril, Cyclobenzaprine (muscle relaxant), Neurontin (Gabapentin), Ultram (opioid analgesic), and Naproxen (nonsteroidal anti-inflammatory drug). On 8/12/2011, he was in clinic for physical examination. He had not been to the pill window to pick up medication since arrival to the Gurney Unit on 8/10/2011. His vital signs were: BP 170/107 mmHg, P 108, R 18, T 96.7. He was treated with Clonidine 0.25 mg at 1155, and his BP went down to 129/74 mmHg with pulse 100 at 1230 on 8/12/2011.

He was found unresponsive with temperature 108 deg F (42.2 deg C) in his cell at 0300 on 8/13/2011. His skin was dry and pale. CPR was initiated, and he was intubated. He was transported to Palestine Regional Medical Center with CPR in progress at 0352. Cardiac monitor showed asystole. CBC at 0357 showed WBC 8.1 x 10³/l, RBC 5.11 x 10⁶/l, HGB 14.9 g/dl, MCV 88.5, and PLT 94 x 10³/l (PLT clumps). He was given epineprine and sodium bicarbonate. The patient was unable to be revived and was pronounced dead at 0416 on 8/13/2011.

A complete autopsy was performed on 8/17/2011.

YX /da
09/08/11

Patient Name JAMES, KENNETH W
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Continued....

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GROSS DESCRIPTION:

EXTERNAL EXAMINATION: The decedent, identified by left toe tag as "James, Kenneth", is a well nourished, well developed, black male, measuring 179 cm in length, and weighing approximately 254 lbs according to recent medical records. The general appearance is consistent with the reported age of 52 years. The body is unclothed. Rigor mortis is present in the arms and legs, and there is fixed lividity on the dorsal surface. The head is normocephalic with essentially no scalp hair anteriorly and with short black and gray scalp hair posteriorly.

The irides are brown with equal pupils measuring 0.4 cm in diameter. The corneas are cloudy, the conjunctivae are congested, and the sclerae are slightly congested and edematous. The nares are patent with no exudate. The patient is partially edentulous. The trachea is midline. Palpation of the neck reveals no lymphadenopathy or thyromegaly.

Body hair distribution is normal male. The chest diameters are normally proportioned. The abdomen is slightly protuberant. Lymph nodes in the supraclavicular, axillary and inguinal regions are not palpable.

The back is unremarkable. The arms and legs are unremarkable. The genitalia are normal male for the age.

The following evidence of medical intervention is present:

1. There is a nasogastric tube in the right nose
2. An intubation tube is in the mouth with holder around the head
3. There are four EKG leads, two on upper chest and another two on left lateral abdominal wall
4. Two AED pads on the chest
5. There is IV line on the right side of the neck
6. Triple lumen IV catheter in the right groin area
7. There is an intraosseous infusion line on the right lower leg

The following marks and scars are present:

1. A well healed longitudinal linear scar on the middle abdominal wall, measuring 30 cm in length with 1.5 cm in width.
2. A well healed oval scar on the left knee medially measuring 1.5 x 0.5 cm.
3. Another oval shaped well healed scar located on the left lower leg medially, measuring 2 x 1.7 cm.
4. A healed scar on the right upper leg laterally, measuring 5 x 2 cm.
5. Two well healed longitudinal linear scars on the lower back, one 7 cm in length, 1 cm in width and another one 3 cm in length and 1 cm in width.

There are multiple tattoos on the body: Tattoo of letters on the upper front

Patient Name JAMES, KENNETH W
 Patient Location AUTOPSY
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Patient Account 20005972-517
 Med. Rec No (0150)1728849
 Patient Name JAMES, KENNETH W
 Age 52 YRS DOB 11/25/58 Sex M Race B
 Admitting Dr OUTSIDE TDCJ
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 Date / Time Admitted 08/17/11 0811
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FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00174

GROSS DESCRIPTION:

chest and the letters are Lurlene with two stars on each side; the second tattoo is a design of heart located on the left upper arm laterally; the third tattoo is on the left forearm laterally with the following letters "LEXAS"; the fourth tattoo is naked female upper part of body which is located at right upper arm anteriorly; the sixth tattoo is with the following letters "EBVCK" which is located on the right forearm posteriorly; the seventh tattoo is on the back with the letters "Jims and Mary" which is located on the upper back.

INTERNAL EXAMINATION: The body is opened using a standard Y shaped incision, to reveal a 2 5 cm thick panniculus and the thoracic and abdominal organs in the normal anatomic positions. The left pleural cavity contains 200 ml of bloody fluid, and the right contains 70 ml of similar fluid.

The pericardial sac contains approximately 10 ml of clear yellowish fluid.

The thymus is largely replaced by fat. No thromboemboli are found in the large pulmonary arteries.

The abdominal cavity contains no fluid. There are moderate peritoneal adhesions with ascending colon, transverse colon and descending colon adherent to the abdominal wall and to the stomach and mesenteric connective tissue.

CARDIOVASCULAR SYSTEM: Heart. The heart weighs 500 gm (normal male 270-360 gm). The pericardium is essentially smooth and glistening with small areas of hemorrhage (possibly due to CPR). There is a moderate amount of epicardial fat. The left and right coronary ostia are identified in the normal locations. The heart is examined by transverse serial slicing of four sections from apex and then opening following the flow of blood. The myocardium is homogeneous red-brown with mottled myocardium in the posterior wall of the left ventricle. The endocardium is normal. The left ventricular wall is 1.5 cm thick (normal 1.0-1.8 cm) at the junction of the posterior papillary muscle and free wall, and the right ventricle is 0.3 cm thick (normal 0.25-0.3 cm) 2 cm below the pulmonic valve annulus, anteriorly. The valve leaflets and cusps are white, delicate and membranous.

Valve circumferences measured on the fresh heart are: tricuspid valve 11.5 cm (normal 12-13 cm), pulmonic valve 8 cm (normal 8.5-9.0 cm), mitral valve 10 cm (normal 10.5-11.0 cm), and aortic valve 8 cm (normal 7.7-8.0 cm). The foramen ovale is closed.

Blood vessels: The coronary circulation is right dominant based on the origin of the posterior descending artery. The apex is supplied by the left anterior descending artery. The coronary arteries reveal moderate atherosclerosis involving left anterior descending artery with 50% stenosis located 2.5 cm from the origin, left circumflex artery with 50% stenosis located 1.8 cm from

Patient Name JAMES, KENNETH W
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the origin and right coronary artery with 30% stenosis located 2.0 cm from the origin. The aorta exhibits mild atherosclerosis in the arch and aortic root segments. The infrarenal aortic segment exhibits mild atherosclerosis, with less than 10% surface area involved with plaques. The celiac, superior and inferior mesenteric, and renal arteries are unremarkable with minimal atherosclerosis. The bilateral iliac arteries exhibit mild atherosclerosis. The superior and inferior vena cavae and their branches are normal. The portal vein is normal

RESPIRATORY SYSTEM: Larynx and trachea: The laryngeal mucosa is normal, and the vocal cords are normal with no lesions. The tracheal mucosa is normal.

Lungs: The right lung weighs 760 gm (normal male 435 gm), and the left 700 gm (normal male 385 gm). The pleural surfaces are smooth and transparent with a moderate amount of carbon deposition. There are subpleural bullae on the pleural surface of right upper lobe. Lividity is present on the dorsal surface. The left lung is inflated with formalin before sectioning. The bronchial and vascular trees are normal. The hilar nodes are normal. The right and left lung parenchyma is dark red with fine porosity, and without consolidation.

GASTROINTESTINAL TRACT: Esophagus: The esophageal mucosa is normal. The esophagus is firmly anchored to the diaphragm.

Tongue: The tongue has a finely granular surface with no coating.

Stomach and duodenum: The stomach contains about 100 ml of bloody dark red fluid. The mucosa is dark red.

The duodenal mucosa is normal.

Pancreas: The pancreas has a normal conformation. It is tan-yellow, normally lobulated and firm in consistency. The pancreatic duct is patent.

Biliary tract: The gallbladder serosa is gray-green and glistening. The gallbladder contains about 15 ml of green bile and with no stones. The mucosa is green and velvety. The cystic duct, hepatic duct, and common duct are normal, and bile is expressed freely from the ampulla on compressing the gallbladder.

Liver: The liver weighs 1790 gm (normal male 1400-1900 gm). The liver surface is smooth with a tan-pale area. Glisson's capsule is transparent and glistening. The liver is serially sliced to reveal a homogeneous lobular pattern. The cut surface is normal without lesions.

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GROSS DESCRIPTION:

Small bowel: The serosa is smooth and transparent with no adhesions. The bowel is normal throughout. The lumen contains green-gray digested food stuff. The mucosa is normal.

Large bowel: The serosa is smooth and transparent with adhesions to the peritoneal wall, stomach and mesentery. The lumen contains loosely formed stool. The mucosa is normal.

The appendix is grossly normal.

Rectum and anus: The rectum and anus are normal.

Reticulo-endothelial System: Spleen: The spleen weighs 120 gm (normal 125-195 gm). It is normal in shape with decreased size. The cut surface is soft and red-purple with no lesions.

Lymph nodes: Lymph nodes in the mediastinum, abdomen and retroperitoneum are normal.

Spine: Multiple spurs are identified in the lower lumbar spine.

Bone marrow: The thoracic and lumbar spine marrow is grossly normal. The trabeculae and cortical bone are of normal density.

GENITO-URINARY SYSTEM: Kidneys: The kidneys are symmetric. The right kidney weighs 160 gm and the left 140 gm (normal male 125-170 gm). The capsules strip with ease to reveal dark red cortical surfaces. The cut surfaces reveal well demarcated cortico-medullary junctions. The pelves and calyces are normal. The renal pelvic mucosa is normal. Perihilar adipose tissue is moderate.

Ureters: The ureters are normal throughout their length, measuring 4.4 cm in maximal external diameter. They are probe-patent into the bladder.

Bladder: The bladder mucosa is trabeculated. The trigone is normal. There is a small area of submucosal hemorrhage, measuring 1.5 x 1.0 cm

Prostate: The prostate is normal in size, color, consistency, and texture. Serial slicing reveals normal granular surfaces with small nodular architecture. The seminal vesicles are normal.

Testes: The right testis weighs 18.5 gm, and the left 22.3 gm (normal 20-25 gm). The tunica albugineas are tan-white, smooth and glistening. The cut surfaces are soft and tan-yellow, with no lesions.

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GROSS DESCRIPTION:

ENDOCRINE SYSTEM: Thyroid: The thyroid weighs 23.8 gm (normal 10-22 gm), and is red-brown, bosselated and glistening. The cut surface is homogeneous, translucent, red-brown with no lesions

Parathyroids: Several brown, soft fragments of tissue are collected as possible parathyroids.

Adrenal glands: The right adrenal gland weighs 8.9 gm and the left 8.5 gm (normal 5-6 gm). The adrenal glands have a normal conformation and position. Serial slicing in the transverse plane reveals 1 mm thick firm golden yellow/brown cortices, with gray soft medullae and one golden yellow nodule in the right adrenal gland measuring 1.7 x 1.5 x 1 cm

BRAIN AND SPINAL CORD: The scalp, calvarium, base of the skull and dura mater are normal. The brain weighs 1380 gm (normal male 1200-1400 gm). The gyri and sulci display a normal pattern. The leptomeninges are unremarkable. The circle of Willis, basilar and vertebral arteries show no atherosclerosis. No indentation/herniation of the cingulate gyri, uncus or molding of the cerebellar tonsils are noted. The brain is fixed in formalin for later examination by a neuropathologist (see neuropathology report).

SPINAL CORD: The grossly normal spinal cord is fixed in formalin for later examination by a neuropathologist.

PITUITARY GLAND: The grossly normal pituitary gland is fixed in formalin for subsequent examination by a neuropathologist.

Deltoid muscle, psoas muscle and gastrocnemius muscle: The skeletal muscles are grossly normal and samples are collected.

Blood and vitreous samples are collected. Vitreous sample was submitted for analysis of electrolytes and osmolarity measurement. Samples of liver, kidney, heart, lung and spleen were frozen for potential further examination.

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08/23/11

Patient Name JAMES, KENNETH W
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 Med. Rec No (0150)1726849
 Patient Name JAMES, KENNETH W
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Pathology Report

FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00174

MICROSCOPIC DESCRIPTION:

Heart, right and left ventricle, Slides 10-15, (6 H&E) (consultation: Dr. Boor for slide 13, posterior wall of left ventricle):
 In the posterior wall of left ventricle, there is focal contraction-band myocardial necrosis in a pattern of patchy-widespread (not associated with ischemic distribution). Cardiomyocytes of left ventricle exhibit hypertrophy. There is no fibrosis in the left and right ventricle.

Left anterior descending coronary artery, Slide 27, (1 H&E):
 There is 50% occlusive atherosclerotic plaque.

Left circumflex coronary artery, Slide 28, (1 H&E):
 There is 50% occlusive atherosclerotic plaque.

Right coronary artery, Slide 29, (1 H&E):
 There is 30% occlusive atherosclerotic plaque.

Lung, left, Slides 16 and 17 (2 H&E, 1 Von-Kossa, 1 DAPI):
 The architecture is preserved and demonstrates congestion. In the inner surface of the arterioles and veins, there is a layer of accumulated autolyzed nucleic acids (hematoxylin stained). It is Von-Kossa negative for calcium but DAPI stain positive for nucleic acids which is suggestive of denatured DNA in the vessel. Anthracosis is noted. No inflammation or thrombi are noted.

Lung, right, Slides 18-20 (3 H&E, 1 Acid Fast, 1 GMS and 1 Gram stain):
 The architecture is preserved and demonstrates congestion with anthracosis. There is focal hemorrhage, fibrinous exudates and macrophages in the alveolar spaces. There is lymphocytic infiltration and foreign body reaction with multinucleated giant cell formation in the right upper lobe suggesting aspiration pneumonia. Acid fast and GMS stains are negative for organisms. Gram stain shows postmortem bacterial growth in the tissue. No thrombus is noted.

Kidneys, bilateral, Slides 3 and 4, (2 H&E):
 There is severe autolysis, but the general architecture is preserved. There are a few completely sclerotic glomeruli. There is interstitial hemorrhage and intraglomerular hemorrhage. The wall of the arterioles is thickened suggesting arteriosclerosis.

Adrenal glands, Slides 1 and 2, (2 H&E):
 There is a cortical adenoma in right adrenal gland. There is autolysis but normal architecture without pathologic change in left adrenal gland.

Liver, Slide 5, (1 H&E):
 There is mild steatosis. Lymphocytic infiltration in the portal triads. A Russell body is noted in the triad.

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MICROSCOPIC DESCRIPTION:

Spleen, Slide 6, (1 H&E):
There is severe congestion. The red pulp is expanded due to congestion, and the white pulp is normal. There is arteriosclerosis.

Pancreas, Slide 7, (1 H&E):
There is severe autolysis but normal architecture without pathologic change.

Thyroid, Slide 7, (1 H&E):
There is no pathologic change.

Parathyroid, Slide 25, (1 H&E):
One piece of parathyroid gland is identified, and there is no pathologic change.

Testes, Slides 1 and 2, (2 H&E):
There is active spermatogenesis, and it is appropriate for given age

Prostate, Slide 21, (1 H&E):
Benign prostatic hyperplasia.

Urinary bladder, Slide 21, (1 H&E):
There is autolysis. No pathologic change is noted.

Tongue, Slide 8, (1 H&E):
No pathologic change is noted.

Esophagus, Slide 8, (1 H&E):
There is mucosal autolysis but otherwise no pathologic change.

Stomach, Slide 8, (1 H&E):
There is severe autolysis, but the architecture is preserved.

Gallbladder, Slide 9, (1 H&E):
There is severe autolysis with no pathologic change.

Ileum, Slide 9, (1 H&E):
There is severe autolysis with no pathologic change.

Colon, Slide 9 (1 H&E):
There is severe autolysis with no pathologic change.

Bone marrow, Slide 25, (1 H&E).
Cellularity is 40%. Myeloid, erythroid, and thrombocytic lineages are identified.

Patient Name JAMES, KENNETH W
Patient Location AUTOPSY
Room/Bed .
Printed Date / Time 09/12/11 - 0717

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Med. Rec No (0150)1726849
Patient Name JAMES, KENNETH W
Age 52 YRS DOB 11/25/58 Sex M Race B
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Autopsy No.: AU-11-00174

MICROSCOPIC DESCRIPTION:

Deltoid muscle, Slide 22, (1 H&E) (consultation: Dr. Campbell).
Focal hypercontracted and eosinophilic rhabdomyocytes are noted.

Psoas muscle, Slide 23, (1 H&E) (consultation: Dr. Campbell):
Focal hypercontracted and eosinophilic rhabdomyocytes are noted.

Gastrocnemius muscle, Slide 24, (1 H&E, 1 Masson's Trichrome) (consultation: Dr. Campbell).
Focal hypercontracted myocytes, eosinophilic myocytes, and disorganization of sarcomeres with loss of cross striations indicating myofiber injury. Masson's trichrome stain emphasizes loss of cross striation in necrotic myofibers, with fragmentation in focal myofibers.

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09/08/11

Patient Name JAMES, KENNETH W
Patient Location AUTOPSY
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 Pathology Report

FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00174

CLINICOPATHOLOGIC CORRELATION:

The decedent was a 52-year-old black male TDCJ inmate with a past medical history of hypertension, depression, back injury (2002, 2004), and drug abuse (marijuana, cocaine). The list of his medications was: Hydrochlorothiazide, Propranolol, Enalapril, Lisinopril, Cyclobenzaprine (muscle relaxant), Neurontin (Gabapentin), Ultram (opioid analgesic), and Naproxen (nonsteroidal anti-inflammatory drug, NSIAD). On 8/12/2011, he was treated with Clonidine 0.25 mg at 1155 for BP 170/107 mmHg, and his BP went down to 129/74 mmHg with pulse 100/min at 1230. He was found unresponsive with temperature 108 deg F (42.2 deg C) in his cell at 0300 on 8/13/2011. His skin was dry and pale. CPR was initiated and he was intubated. CBC at 0357 showed WBC 8.1 x 10³/l, RBC 5.11 x 10⁶/l, HGB 14.9 g/dl, MCV 88.5, and Platelet 94 x 10³/l (PLT clumps). He was given epinephrine and sodium bicarbonate. The patient was unable to be revived and was pronounced dead at 0416 on 8/13/2011. A complete autopsy was performed on 8/17/2011.

At autopsy, the aorta revealed mild atherosclerosis, and the coronary arteries exhibited moderate atherosclerosis. The heart demonstrated cardiomegaly and left ventricular hypertrophy. There was focal patchy contraction-band myocardial necrosis in the posterior wall of the left ventricle. Both lungs were congested. Right lung showed focal hemorrhage with aspiration pneumonia. Gastrocnemius muscle demonstrated focal hypercontracted myocytes, eosinophilic myocytes, and disorganization of sarcomeres with loss of cross striation indicating myofiber injury.

Based on this patient's body temperature (42.2 deg C), advanced autolysis of organs, focal patchy myocardial necrosis, rhabdomyolysis, decreased platelet count and no other cause of death. Environmental hyperthermia related heat stroke is considered though toxicology tests and vitreous analysis are still pending. Heat stroke (HS) is a serious and potentially life-threatening condition defined as a core body temperature > 40.6 deg C. Two forms of HS are recognized, classic heat stroke, usually occurring in very young or elderly persons, and exertional heat stroke, more common in physically active individuals. An elevated body temperature and neurologic dysfunction are necessary but not sufficient to diagnose HS. Associated clinical manifestations such as extreme fatigue; hot dry skin or heavy perspiration; nausea; vomiting; diarrhea; disorientation to person, place, or time; dizziness; uncoordinated movements; and reddened face are frequently observed. Potential complications related to severe HS are acute renal failure, disseminated intravascular coagulation, rhabdomyolysis, acute respiratory distress syndrome, acid-base disorders, and electrolyte disturbances. Long-term neurologic sequelae (varying degrees of irreversible brain injury) occur in approximately 20% of patients. The prognosis is optimal when HS is diagnosed early and management with cooling measures and fluid resuscitation and electrolyte replacement begins promptly. The prognosis is poorest when treatment is delayed > 2 hours (1).

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Autopsy No.: AU-11-00174

CLINICOPATHOLOGIC CORRELATION:

A heat wave is defined as three or more consecutive days of air temperatures > 32.2 deg C. Exposure to excessive heat may cause illness, as heat directly induces tissue injury, the severity of which is dependent upon the critical thermal maximum (i.e., the level and duration of core heating). The critical thermal maximum in humans is a body temperature of 41.6 deg C to 42 deg C for between 45 minutes and 8 hours. At extreme body temperatures (eg, 49 -50 deg C), all cellular structures are destroyed, and cellular necrosis occurs in < 5 minutes (1).

The precise incidence of HS is unknown for many reasons. First, in the United States, heat-related death is not a reportable condition in any state. Second, the definition of HS varies, resulting in underreporting of HS cases. Third, many heat-related illnesses and deaths are unrecognized as such and are not reported. Therefore, the reported incidence of HS in the United States varies from 17.6 to 26.5/100,000. Why some cases progress to HS and others do not is unclear, but it appears that genetic polymorphisms may determine susceptibility; the likely candidate genes include those that encode cytokines, coagulation proteins, and heatshock proteins. Mortality rates for HS range from 10% to 70%, depending on the severity and age of the patient. The greatest numbers of deaths occur when treatment is delayed for >2 hours (1).

This patient had several risk factors of HS: lack of air conditioning, chronic illness, and use of diuretics (Hydrochlorothiazide) and beta blockers (Propranolol). Studies have shown that diuretics and beta blockers may impair thermoregulation (2). In addition, the patient was treated with Clonidine for his hypertension one day before his death. A research group has demonstrated that Clonidine induces hyperthermia in experimental rats at high ambient temperature (3). Confirmation of dehydration was attempted via vitreous humor electrolyte analysis, but the prolonged postmortem interval and putrefaction complicated the assessment.

The cardiovascular system is frequently compromised in HS. The initial response is hyperdynamic, followed by hypotension, tachycardia and tachydysrhythmia (4). There is focal patchy myocardial necrosis in this patient. One study has showed that a subpopulation of HS victims will develop myocardial ischemia (5).

In summary, it is our opinion that the manner of death is natural. The immediate cause of death is most likely environmental hyperthermia-related classic heat stroke though toxicology tests and vitreous humor tests are still pending. Results of the toxicology tests and vitreous humor analysis will be reported as an addendum.

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FINAL AUTOPSY REPORT

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Autopsy No.: AU-11-00174

CLINICOPATHOLOGIC CORRELATION:

References:

- 1.T. Yeo, Heat Stroke, A comprehensive review, AACN Clinical Issues, 2004; 15 (2): 280-293
- 2.Prevention and treatment of heat injury. Med Lett Drugs Ther. 2003; 45:58-60.
- 3.E. Mogilnicka, V. Klimek, G. Nowak, and A. Czyrak, Clonidine and beta-agonists induce hyperthermia in rats at high ambient temperature. J. Neural Transmission 1985; 63, 223-235
- 4.H. Grogan and PM. Hopkins. Heat stroke: implications for critical care and anesthesia. Br J. Anaesth. 2002;88:700-707.
- 5.J.E. Dematte, K. OMara, J. Bueschler. Near-fatal heat stroke during the 1995 heat wave in Chicago. Ann Intern Med. 1998;129:173-181.

YX /da
09/08/11

DAVID H. WALKER, M.D., PATHOLOGIST

(Electronic Signature)

09/09/11

Patient Name JAMES, KENNETH W
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END OF REPORT

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 Patient Name HUDSON, DOUGLAS
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172 2504
FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00155

AUTOPSY INFORMATION:

Occupation: INMATE Birthplace: UNKNOWN Residence: TEXAS
 Date/Time of Death: 7/25/2011 16:56 Date/Time of Autopsy: 7/27/2011
 Pathologist/Resident: ARONSON/KOSHY Service: TDC CONTRACT
 Restriction: NONE

The on-line version of the final autopsy report is abbreviated. If you would like a copy of the complete final report, or if you have any questions regarding this report, please contact the Autopsy Division Office, (409)772-2858.

FINAL AUTOPSY DIAGNOSIS

- I. Body as a whole: Findings consistent with environmental hyperthermia (body temperature of 105 F; environmental temperature noted to be above 100 F) A2, C2
- A. Lungs, bilateral: congestion and edema A4
 - 1. Lung, right: Focal early bronchopneumonia A4
 - B. Pleural cavities: Pleural effusion (right:150 ml and left: 100 ml) A4
 - C. Bronchi: Submucosal hemorrhage, mild A4
 - D. Brain, cerebral cortex, hippocampus and cerebellum: Extensive acute ischemic change in neurons (global encephalomalacia) A4
 - 1. Brain: Edema A1
 - E. Skin, dorsum of feet: Fine petechiae A4
 - F. Colon, ascending: Focal areas of mucosal hemorrhage A4
 - G. Spleen: Congestion A4
 - H. Kidneys, bilateral: Histologic findings consistent with acute tubular necrosis A4
- II. Cardiovascular system: History of hypertension A3
- A. Heart: Cardiomegaly due to biventricular hypertrophy (heart weight 370 g) A3
 - B. Heart, right coronary artery: atherosclerosis with 75% stenosis of the lumen A3
 - C. Heart, left anterior descending artery: atherosclerosis with 75% stenosis of the lumen A3
 - D. Heart, left circumflex artery: atherosclerosis with 75% stenosis of the lumen A3
- III. Other findings:
- A. Thyroid: Thyromegaly, mild (weight = 28 g) A5
 - B. Colon, descending: Diverticulosis, mild A5

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***TYPE: Anatomic(A) or Clinical(C) Diagnosis.
 IMPORTANCE: 1-immediate cause of death (COD); 2-underlying COD;
 3-contributory COD; 4-concomitant, significant; 5-incidental ***

Patient Name HUDSON, DOUGLAS
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Patient Account 20005972-517
Med. Rec No (0150)848436Q
Patient Name HUDSON, DOUGLAS
Age 63 YRS DOB 09/10/48 Sex M Race C
Admitting Dr OUTSIDE TDCJ
Attending Dr OUTSIDE TDCJ
Date / Time Admitted 07/26/11 1158
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Pathology Report

FINAL AUTOPSY REPORT

Autopsy Office (409)772-2858

Autopsy No.: AU-11-00155

FINAL AUTOPSY DIAGNOSIS

C. Lungs, apical pleura: Fibrosis
D. Liver: Mixed macro/microvesicular steatosis

A5
A5

CAUSE OF DEATH: Complications of environmental hyperthermia (heat stroke)
CONTRIBUTORY FACTORS: Atherosclerotic coronary artery disease
MANNER OF DEATH: Accident

Patient Name HUDSON, DOUGLAS
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Pathology Report

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CLINICAL SUMMARY:

The patient was a 62 year old male TDCJ inmate with a past medical history of coronary artery disease and paroxysmal ventricular tachycardia. The patient's medication list included amitriptyline, aspirin, and metoprolol. According to medical records, the patient was prescribed amitriptyline on 7-22-11.

On 7/24/2011, he was found to be unconscious, but breathing, in his cell. There is also a report of seizure-like activity but the quality and duration is unknown. His temperature taken at the time was noted to be 105 degrees Fahrenheit and the temperature outside was over 100 degrees Fahrenheit. Fluids were started and ice packs were placed under his armpits and groin. The patient's skin was noted to be pale, hot and dry. The patient then went into supraventricular tachycardia with a rate of 236 beats per minute and was treated with adenosine. The patient was flown to Palestine Regional Medical Center and upon arrival he was noted to be in Pulseless Electrical Activity for 2-4 minutes. The patient was intubated and revived with advanced cardiac life support, placed on pressors, and transferred to the intensive care unit. Laboratory results showed metabolic and respiratory acidosis, mild leukocytosis, coagulopathy, acute renal failure (BUN = 34 mg/dl and creatinine = 2.7 mg/dl) and elevated cardiac enzymes (CK = 601 U/L, troponin I = 1.05 ng/ml, CKMB = 6.5 mg/ml). Chest x-ray showed bilateral upper lobe infiltrates suggestive of pneumonia. The patient remained comatose, his condition did not improve and it was decided to withdraw care. The patient expired on 7-25-11 and an autopsy was done 7-27-11.

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 07/29/11

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GROSS DESCRIPTION:

EXTERNAL EXAMINATION: The decedent, identified by right wrist ID bracelet as "Douglas Hudson", is a well developed, well nourished, white male, measuring approximately 200 cm in length, and weighing approximately 225 lbs according to recent medical records. The general appearance is consistent with the reported age of 62 years. Rigor mortis is present in the arms and legs and there is fixed lividity on the posterior surface of both arms and legs. The head is normocephalic and the patient is bald.

The irides are blue with equal pupils measuring 0.3 cm in diameter. The corneas are cloudy, the conjunctivae are pale, and the sclerae are white. There is blood coming out of the right nare. Dentition is normal. Buccal membranes are normal. The trachea is midline. Palpation of the neck reveals no lymphadenopathy or thyromegaly.

Body hair distribution is normal male. The abdomen is slightly protuberant. Lymph nodes in the supraclavicular, axillary and inguinal regions are not palpable.

The back is remarkable for lividity on the superior and inferior parts. The arms and legs are unremarkable. The genitalia are normal male for the age.

The following evidence of medical intervention is present: There is an approximately 3 x 3 cm bruise on his sternum. There are medically related needle punctures in both the left and right antecubital fossae. There is IV placement in both of the dorsum of both hands. There is a puncture site on the right lateral portion of the neck.

The following marks and scars are present: There is a tattoo of two hearts connected together on the right bicep area. There is a right ankle ID bracelet as well as a right toe ID tag. There are abrasions on the medial side of both feet. There are petechiae on the dorsal surface of both feet.

INTERNAL EXAMINATION: The body is opened using a standard Y shaped incision, to reveal a 4.5 cm thick panniculus and the thoracic and abdominal organs in the normal anatomic positions. The left pleural cavity contains 100 ml of clear red fluid, and the right contains 150 ml of clear red fluid.

The pericardial sac contains 10 ml of clear red fluid. Ribs 4 and 5 are fractured on the left and ribs 3,4,5,6, and 7 are fractured on the right.

The thymus is largely replaced by fat. No thromboemboli are found in the large pulmonary arteries.

The abdominal cavity contains no fluid. There are no peritoneal adhesions.

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Autopsy No.: AU-11-00155

GROSS DESCRIPTION:

CARDIOVASCULAR SYSTEM: Heart: The heart weighs 570 gm (normal male 270-360) and is normal in shape, but increased in size. The pericardium is stained with blood, but smooth in texture. There is a large amount of epicardial fat largely obscuring the coronary arteries. The heart is examined by transverse serial slicing then opening following the flow of blood. Triphenyl tetrazolium chloride (TTC) staining of a section of myocardium does not demonstrate any acute infarct. The remaining myocardium is homogeneous red-brown. The endocardium is normal. The left ventricular wall measures 1.2 cm thick (normal 1.0-1.8 cm) at the junction of the posterior papillary muscle and free wall, and the right ventricle is 0.5 cm thick (normal 0.25-0.3 cm) 2 cm below the pulmonic valve annulus, anteriorly. The valve leaflets and cusps are white, delicate and membranous.

Valve circumferences measured on the fresh heart are: tricuspid valve 12.5 cm (normal 12-13 cm), pulmonic valve 10.5 cm (normal 8.5-9.0 cm), mitral valve 12.4 cm (normal 10.5-11.0 cm), and aortic valve 9.2 cm (normal 7.7-8.0 cm). The foramen ovale is closed.

Blood vessels The calcified coronary arteries are removed from the heart and decalcified prior to examination. The coronary circulation is right dominant based on the origin of the posterior descending artery. The apex is supplied by the left anterior descending. The coronary arteries were removed for further examination. Sectioning reveals maximal stenosis of approximately 75% in each of the left anterior descending, right coronary and left circumflex arteries by plaque. No acute plaque changes are seen.

The aorta exhibits approximately 10% surface area involvement with plaques and mild ulceration located in the abdominal portion of the aorta below the renal arteries. The celiac, superior and inferior mesenteric, and renal arteries are normal. The superior and inferior vena cavae and their branches are normal. The portal vein is normal.

RESPIRATORY SYSTEM: Larynx and trachea: The laryngeal mucosa is normal, and the vocal cords are normal. The tracheal mucosa is normal.

Lungs: The right lung weighs 950 gm (normal male 435), and the left 990 gm (normal male 385). The pleural surfaces show anthracotic changes bilaterally and are otherwise smooth and red. Both lungs are enlarged and congested. The left lung is inflated with formalin before sectioning. The bronchial trees are hyperemic. The vascular trees are normal. The hilar nodes are normal. The lung parenchyma is dark red and smooth with fine porosity.

GASTROINTESTINAL TRACT. Esophagus: The esophageal mucosa is normal. The esophagus is firmly anchored to the diaphragm.

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Autopsy No.: AU-11-00155

GROSS DESCRIPTION:

Tongue: The tongue has a finely granular surface with no coating. On sectioning of the tongue there is a small hemorrhage on the right side of the tongue.

Stomach and duodenum: The stomach contains 100 ml of chyme which is black and smooth in consistency. The mucosa is normal except for slight petechial hemorrhages.

The duodenal mucosa is normal.

Pancreas: The pancreas has a normal conformation and is slightly hemorrhagic. The pancreatic duct is patent.

Biliary tract: The gallbladder serosa is gray-green and glistening. The gallbladder contains approximately 30 ml of green smooth bile with no stones. The mucosa is smooth and dark green. The cystic duct, hepatic duct, and common duct are normal, and bile is expressed freely from the ampulla on compressing the gallbladder.

Liver: The liver weighs 1320 gm (normal male 1400-1900). The liver surface is smooth and homogeneous. Glisson's capsule is transparent. The liver is serially sliced to reveal a homogeneous lobular pattern. There is no focal lesion.

Small Bowel: The serosa is smooth and transparent with no adhesions. The bowel is normal throughout. The lumen contains semiliquid material. The mucosa is normal.

Large bowel: The serosa is smooth and transparent with no adhesions. The lumen contains feces. The mucosa contains foci of petechial hemorrhages starting in the ascending colon and going to the transverse colon. The appendix is grossly normal.

The appendix is grossly normal.

Rectum and anus: The rectum and anus are normal.

Reticulo-Endothelial System: Spleen: The spleen weighs 258.1 gm (normal 125-195 gm). It is normal in shape, but increased in size.

Lymph nodes: Lymph nodes in the mediastinum, abdomen and retroperitoneum are unremarkable.

Spine: The spine is normal.

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GROSS DESCRIPTION:

Bone marrow: The thoracic and lumbar spine marrow is grossly normal. The trabeculae and cortical bone are normal density.

GENITO-URINARY SYSTEM. Kidneys: The kidneys are symmetric. The right kidney weighs 228 gm and the left 250 gm (normal male 125-170 gm). The capsules strip with ease to reveal a red smooth cortical surfaces. Serial slicing reveals well demarcated cortico-medullary junctions. The cortices are 0.9 cm thick on the right and the cortices range from 0.5 to 1.2 cm on the left, on the right the medullas 1.4 cm thick and on the left the medullae measures 0.9 cm. The pelves and calyces are normal. The renal pelvic mucosa is normal. Perihilar adipose tissue is increased.

Ureters: The ureters are normal throughout their length, measuring 0.3 cm in maximal external diameter. They are probe-patent into the bladder.

Bladder: The bladder is normal. The trigone is normal.

Prostate: The prostate is normal in size, color, consistency, and texture. Serial slicing reveals normal granular surfaces without distinct architecture. The seminal vesicles are normal.

Testes: The right testis weighs 22 gm, and the left 27.6 gm (normal 20-25 gm). The tunica albugineas are tan-white, smooth and glistening. The cut surfaces are soft and tan-yellow, with tubules which string with ease.

ENDOCRINE SYSTEM: Thyroid: The thyroid weighs 28.6 gm (normal 10-22 gm), and is red-brown, bosselated and glistening. The cut surface is homogeneous, translucent, red-brown.

Parathyroids: Two parathyroids on the left side were taken for specimen section they were too small to be weighed.

Adrenal glands: The right adrenal gland weighs 10.3 gm and the left 10.1 gm (normal 5-6 gm). The adrenal glands have a normal conformation and position.

BRAIN AND SPINAL CORD. The scalp, calvarium, base of the skull and dura mater are normal. The brain weighs 1500 gm (normal male 1200-1400). The sulci appear to be obliterated which goes with cerebral edema, the gyri are normal. The circle of Willis, basilar and vertebral arteries show no atherosclerosis. No indentation/herniation of the cingulate gyri, uncus or molding of the cerebellar tonsils are noted. The brain is fixed in formalin for later examination by a neuropathologist (see neuropathology report).

SPINAL CORD: The grossly normal spinal cord is fixed in formalin for later

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Pathology Report

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Autopsy No.: AU-11-00155

GROSS DESCRIPTION:

examination by a neuropathologist.

PITUITARY GLAND. The grossly normal pituitary gland is fixed in formalin for subsequent examination by a neuropathologist.

Blood samples were taken for toxicology. Samples of liver, kidney, heart, lung, and spleen, were frozen for potential further examination.

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FINAL AUTOPSY REPORT

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Autopsy No.: AU-11-00155

MICROSCOPIC DESCRIPTION:

All slides H and E unless stated otherwise. (Autolysis) after a diagnosis means post mortem decomposition affected the assessment

SKIN, FOOT, slide 1: small hemorrhage in deep dermis; no inflammatory reaction observed

PSOAS MUSCLE, slide 2: Two hypercontracted fibers but none with total loss of cross-striation or overt necrosis; Dr. Gerald Campbell of the University of Texas Medical Branch Department of Pathology was consulted for this slide

RIGHT CORONARY ARTERY, slide 3: atherosclerosis with 75% stenosis of the lumen; minimal foam cells seen; no evidence of thrombosis or hemorrhage

LEFT ANTERIOR DESCENDING ARTERY, slide 4: atherosclerosis with 75% stenosis of the lumen; no evidence of thrombosis or hemorrhage

LEFT CIRCUMFLEX CORONARY ARTERY, slide 5: atherosclerosis with 75% stenosis of the lumen; diffuse concentric thickening; no evidence of thrombosis or hemorrhage

TISSUE SUBMITTED AS PARATHYROID GLAND, slide 6: no parathyroid identified

THYROID, slide 7: No pathologic change

ADRENAL, slide 8: No pathologic change

PANCREAS, slide 9: No pathologic change (autolysis)

TESTIS, slide 10: Active spermatogenesis, No pathologic change

PROSTATE, slide 11: Concretions seen in the lumen of glands; multifocal areas of lymphocytic infiltration consistent with chronic prostatitis

SPLEEN, slide 12: Congestion; no evidence of "septic splenitis"

COLON, slides 13-14: Focal area of lamina propria hemorrhage without inflammation

LIVER, slide 15: Mixed macro/microvesicular steatosis; no evidence of inflammation or tumor

LUNGS slides 16,29 (right); slides 18, 30 (left) (4 H&E, 1 GRAM): Very focal areas of early bronchopneumonia seen in 2 out of a total of 10 random sections of lung. No bacteria are seen on gram stain of slide 16. Uninvolved areas of

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MICROSCOPIC DESCRIPTION:

lung show only congestion.

BRONCHUS, slide 17: Submucosal hemorrhage; no inflammation seen

KIDNEY, right, slide 19 and left slide 20: granular casts within some tubules, consistent with acute tubular necrosis

JEJUNUM, slide 21: No pathologic change

HEART, left, anterior, slide 22: perivascular fibrosis, congestion; no evidence of acute myocardial injury; (autolysis)

HEART, interventricular septum, slide 23. Subendocardial fibrosis; no evidence of acute myocardial injury

HEART, left, posterior, slide 24: multifocal areas of interstitial fibrosis; no evidence of acute myocardial injury

HEART, left ventricle, lateral, slide 25: perivascular fibrosis; no evidence of acute myocardial injury

HEART, right ventricle, slide 26: myocyte hypertrophy; no evidence of acute myocardial injury

VERTEBRA, slide 27: No pathologic change; normal cellularity; all cell lines show normal maturation and number

TONGUE, slide 28 Submucosal hemorrhage, no inflammatory reaction seen

POST-MORTEM TESTS.

Vitreous fluid
Electrolytes (performed at UTMB labs)
Sodium 138 mmol/L
Potassium 12.9 mmol/L
Chloride 113 mmol/L
Urea nitrogen 12 mg/dL
Creatinine 1.3 mg/dL
Osmolality 306 mos/kg

Toxicology (Performed at Aegis Sciences Corp): Pending at time of this report. Results will be reported separately.

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CLINICOPATHOLOGIC CORRELATION:

This patient was a 62 year old male TDCJ inmate who expired in the hospital less than 24 hours after suffering a cardiopulmonary arrest with documented elevated body temperature reading of 105 degrees Fahrenheit. During his brief hospitalization, he developed coagulopathy, acute renal failure, elevated cardiac enzymes, and pulmonary infiltrates. Clinical considerations were pneumonia/sepsis vs. heat stroke.

At autopsy, there were a number of findings characteristic (but not diagnostic of) heat stroke. Multifocal hemorrhages in skin, lung, lamina propria of bowel and bronchi, and tongue correlate with the coagulopathy. The kidneys showed findings consistent with acute tubular necrosis. The brain showed extensive acute ischemic changes and edema, the result of anoxic brain injury from the cardiac arrest. Post-mortem toxicology results are pending at the time of this report and will be reported separately. Analysis of electrolytes from vitreous humor post-mortem did not reveal a dehydration pattern, but this is probably because he received fluids during his hospital treatment.

The lungs showed very focal, microscopic areas of acute bronchopneumonia, which we view as a complication of his arrest and intubation, rather than the cause of his hyperthermia and multi-organ failure.

In this case, the clinical course of elevated temperature, documented high environmental temperatures, clinical features (tachycardia, coagulopathy, renal failure, and coagulopathy) in the absence of any significant infection all support the diagnosis of environmental hyperthermia (heat stroke). It should be noted that the patient was taking amitriptyline which is a medication known to interfere with heat dissipation mechanisms.

Additional autopsy findings include an enlarged and hypertrophic heart (weight = 570 grams) and coronary artery disease. The left anterior descending, right coronary and left circumflex arteries all showed atherosclerosis with approximately 75% luminal obstruction. However, there was no evidence of acute myocardial injury, only some old areas of fibrosis. This fibrosis is not surprising given the patient's long history of coronary artery disease. Incidental findings include mild thyromegaly (weight = 28 grams), colonic diverticulosis, apical lung pleural fibrosis, and a fatty liver.

In summary, it is our opinion that the cause of death is environmental hyperthermia (heat stroke). Contributory factors include atherosclerotic cardiovascular disease, and treatment with amitriptyline. The manner of death is accident.

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CLINICOPATHOLOGIC CORRELATION:
09/12/11

JUDITH F. ARONSON, M.D., PATHOLOGIST
10/05/11

(Electronic Signature)

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END OF REPORT